

AMENDMENTS TO THE CLAIMS:

Please amend claims 45 and 62, add claims 96-100, and cancel claim 95 without prejudice or disclaimer as follows. This listing of the claims replaces all prior versions and listing of claims in the application.

LISTING OF CLAIMS:

1 – 44 Cancelled

45. (Currently amended) A nucleic acid molecule that encodes a mutant adeno-associated virus (AAV) Rep protein that has increased activity, wherein increased activity of the Rep protein is manifested as an increased titer of virus upon introduction and replication in a host cell of virus, in its genome, containing the nucleic acid molecule encoding the mutant Rep protein compared to the titer of virus upon introduction and replication of a virus containing a wild type Rep gene, wherein:

the AAV serotype is an AAV-1, AAV-2, AAV-3, AAV-3b, AAV-4 or AAV6 serotype; and

the mutation is in the equivalent position in each serotype.

46. (Original) A cell, comprising the nucleic acid molecule of claim 45.

47 - 61 Cancelled

62. (Currently amended) A nucleic acid molecule of claim 45, comprising mutations at one or more of residues, whereby the activity of the mutant Rep protein is increased as assessed by rAAV production compared to the native Rep protein,

wherein:

the mutations comprise replacements of codons encoding native amino acid residue(s) selected from among: T by N at position 350 of (SEQ ID No. 747); T by I at position 462 of (SEQ ID No. 747); P by R or L or Y at position 497 of (SEQ ID No. 747); ~~P by L at position 497 of (SEQ ID No. 747); P by Y at position 497 (SEQ ID No. 747);~~ T by N at position 517 of (SEQ ID No. 747); G by D or S at position 598 of (SEQ ID No. 747); ~~G by S at position 598 (SEQ ID No. 747);~~ or V by P at position 600 of AAV-2 (SEQ ID No. 747) or the same replacements of the corresponding residues in the other serotypes; ~~wherein:~~

residue 1 corresponds to residue 1 of the Rep78 protein encoded by nucleotides 321-323 of SEQ ID No. 746) of the AAV-2 genome; and

the listed residues reference their positions in wildtype AAV-2 nucleic acid molecules and the encoded proteins set forth in SEQ ID Nos. 746 and 747, respectively.

~~whereby the activity of the mutant Rep protein is increased as assessed by rAAV production compared to the native Rep protein.~~

63. – 69. Cancelled.

70. (Original) A recombinant AAV, comprising the nucleic acid molecule of claim 62.

71. – 77. Cancelled.

78. (Original) A cell, comprising the recombinant AAV of claim 70.

79- 93. Cancelled.

94. (Previously presented) The nucleic acid of claim 62, wherein the Rep protein is Rep 78, Rep 68, Rep 52 or Rep 40.

95. Cancelled.

96. (New) A nucleic acid molecule of claim 45, comprising a sequence of amino acids encoding any of the Rep proteins set forth in any of SEQ ID Nos. 113-116, 213-216, 233-244, 277-280, 290-294, 297 and 298; and nucleic acid molecules encoding Rep proteins in any of AAV-3, AAV-3b, AAV-4, AAV-6 and AAV-7 containing the corresponding codon replacements.

97. (New) A nucleic acid molecule of claim 45, comprising a sequence of amino acids encoding any of the Rep proteins set forth in any of SEQ ID Nos. 113-116, 213-216, 233-244, 277-280, 290-294, 297 and 298.

98. (New) A recombinant AAV, comprising the nucleic acid molecule of claim 45.

99. (New) A recombinant AAV, comprising the nucleic acid molecule of claim 96.

100. (New) A recombinant AAV, comprising the nucleic acid molecule of claim 97.